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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
CHACKO DAVIS, DABORAH	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/825,388
Filing Date: April 15, 2004
Appellant(s): SLAUGHTER, VICTOR BLAKEMORE

Mark D. Elchuk
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 26, 2008, appealing from the Office action mailed April 3, 2008, and the Status of Claims filed September 23, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US2002/0197869	Nakagawa et al., hereinafter referred to as Nakagawa	12-2002
4,015,986	Paal et al., hereinafter referred to as Paal	04-1977

5,670,376	Obeng	09-1997
6,368,421	Oberlander et al., hereinafter referred to as Oberlander	04-2002
US2004/0160225	Kung	08-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 6-7, 10, 13, and 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Publication No. 2002/0197869 (Nakagawa et al., hereinafter referred to as Nakagawa) in view of U. S. Patent No. 4,015,986 (Paal et al., hereinafter referred to as Paal) and U. S. Patent No. 5,670,376 (Obeng).

Nakagawa, in the abstract, in [0010], [0011], [0014], [0018], [0019], [0022], [0024], [0051], [0052], [0053], [0056], [0057], [0060], [0063], [0064], [0065], [0072], [0074], [0076], [0077], [0078], [0084], [0090], discloses immersing (submersing) an exposed resist coated substrate (cured resin, exposed resist-coated substrate is subjected to stripping) in a stripping bath (storage device containing liquid) thereby the

substrate is submersed in the stripping liquid, said resist-coated substrate undergoing a stripping process in the stripping treatment bath, wherein the bath includes a stripping liquid (water-based) that strips the resist from the substrate resulting in an increase in the concentration of the resist in the resist stripping liquid; the increase in dissolved resists increases the concentration of the degraded components in the resist stripping liquid causing the ratio of the amount of degraded components to the amount of the stripping liquid to increase (i.e., resist stripping rate drops), also causing a change in the electrical conductivity (electrical characteristics) of the water-based stripping liquid; measuring the electrical conductivity, using an electrical conductivity meter, of the resist stripping liquid along with the degraded components in the treatment adjusting bath to ascertain the degraded component concentration in the liquid; replenishing (replacing the used resist stripping liquid with unused stripping liquid) the stripping treatment bath with fresh stripping liquid (by controlling inflow and outflow of the fresh liquid and used liquid with corresponding control valves) when electrical conductivity measurements indicate that the degradation limit (dissolved resin exceeds a desired range) value has been exceeded, and thereby restoring the resist stripping performance of the resist stripping liquid (claims 1, 4, 6-7, 10, 13, and 16).

The difference between the claims and Nakagawa is that Nakagawa does not disclose that the submersion of the resist coated substrate (resin coated object) is in the liquid in the storage device (liquid in the bath).

Paal, in col 4, lines 7-15, in col 5, lines 3-40, discloses that the substrate with the photoresist is immersed in a solution in the tank (container).

The difference between the claims and Nakagawa in view of Paal is that Nakagawa in view of Paal does not disclose that the changes in the electrical conductivity are used to drive a visual display in the claimed manner.

Obeng, in the abstract, and in col 2, lines 1-38, discloses that the changes in the conductivity (i.e., electrical conductivity) are measured, monitored and visually displayed via a computer indicating the different values (ratio of dissolved photoresist to solvent).

Therefore, it would be obvious to a skilled artisan to modify Nakagawa by immersing the substrate in the solution in the container as taught by Paal because Paal, in col 6, lines 46-68, and in col 7, lines 1-3, discloses that the photoresist coated substrates that were subjected to stripping by immersing in the solution in a tank for a predetermined time resulted in a substrate surface that was completely clean (from photoresist residues) and unstained, and the quality of the substrate surface from which the photoresist had been removed remained excellent. Therefore, it would be obvious to a skilled artisan to modify Nakagawa in view of Paal by employing a computer in the manner suggested by Obeng because Obeng in col 2, lines 1-7, discloses that using a computer enables the continuous monitor of the solvent used during integrated circuit processing and further enables the production of improved integrated circuits.

3. Claims 2, 5, and 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Publication no. 2002/0197869 (Nakagawa et al., hereinafter referred to as Nakagawa) in view of U. S. Patent No. 4,015,986 (Paal et al., hereinafter referred to as Paal) and U. S. Patent No. 5,670,376 (Obeng) as applied to

claims 1, 4, 6-7,10, 13, and 16, above and further in view of U. S. Patent No. 6,368,421 (Oberlander et al., hereinafter referred to as Oberlander).

Nakagawa in view of Paal and Obeng is discussed in paragraph no. 2.

Nakagawa, in [0002], [0004], and [0005], discloses that after the resist (resin) is exposed to light (exposed portions of the resist is cured), the exposed resist is subjected to resist stripping process. Nakagawa, in [0051], discloses that the stripping liquid is a glycol ether type solvent.

The difference between the claims and Nakagawa in view of Paal and Obeng is that Nakagawa in view of Paal and Obeng does not disclose using laser to form a cured resin portion on the object (substrate coated with the resist) (claims 2, and 11). Nakagawa in view of Paal and Obeng does not disclose that the glycol ether solvent is a tripropylene glycol methyl ether (claim 5).

Oberlander, in col 5, lines 35-44, discloses that laser radiation is used for performing exposure on the photoresist coated substrate (curing the photoresist). Oberlander, in col 3, lines 30-39, discloses that the resist stripping solution is a glycol ether type solvent such as tripropyleneglycolmethylether.

Therefore, it would be obvious to a skilled artisan to modify Nakagawa in view of Paal and Obeng by employing the solvent suggested by Oberlander because Oberlander in col 3, lines 30-40, and in col 6, lines 20-28, discloses that the suggested solvent is a non-corrosive stripper for photoresists and organic residues and is easily miscible with water and has a boiling point greater than 60°C, and thereby suitable for minimal heating. It would be obvious to a skilled artisan to modify Nakagawa in view of

Paal and Obeng by using laser to cure resin as suggested by Oberlander because Oberlander, in col 5, lines 40-45, discloses that any actinic radiation including laser can be used to perform exposure on the resist layer and Nakagawa, in [0004], discloses that the resist is irradiated (cured) by performing exposure to light.

4. Claims 8-9, 14-15, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Publication No. 2002/0197869 (Nakagawa et al., hereinafter referred to as Nakagawa) in view of U. S. Patent No. 4,015,986 (Paal et al., hereinafter referred to as Paal) and U. S. Patent No. 5,670,376 (Obeng) as applied to claims 1, 4, 6-7,10, 13, and 16, above and further in view of U. S. Patent Application Publication No. 2004/0160225 (Kung).

Nakagawa in view of Paal and Obeng is discussed in paragraph no. 2.

Nakagawa, in [0014], [0022], [0023], [0076], [0082], discloses that the electrical conductivity meter measures the changes in the electrical conductivity based on the increase in the ratio of the degraded component concentration of the resist residues to the concentration of the resist stripping liquid.

The difference between the claims and Nakagawa in view of Paal and Obeng is that Nakagawa in view of Paal and Obeng does not disclose indicating ranges of the ratio via illumination and non-illumination of at least one light-emitting diode (claims 8, and 14). Nakagawa in view of Paal and Obeng does not disclose indicating at least three different ranges of the ratio via illumination and non-illumination of the at least two light-emitting diodes (claims 9, and 15).

Kung, in [0034], and in [0035], discloses using LED's (three) to visually indicate at least three ranges of electrical conductivity measurements.

Therefore, it would be obvious to a skilled artisan to modify Nakagawa in view of Paal and Obeng by replacing the conductivity meter with LED's as suggested by Kung because Kung, in [0009], discloses that an LED can be used in place of a meter and in [0034], discloses that using more than one LED's enable the indication of the different conductivity levels such as good, low, or bad using the LED's corresponding colors of green, amber and red respectively.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Publication no. 2002/0197869 (Nakagawa et al., hereinafter referred to as Nakagawa) in view of U. S. Patent No. 4,015,986 (Paal et al., hereinafter referred to as Paal) and U. S. Patent No. 6,368,421 (Oberlander et al., hereinafter referred to as Oberlander) further in view of U. S. 5,670,376 (Obeng).

Nakagawa, in the abstract, in [0002], [0004], [0005], [0010], [0011], [0014], [0018], [0019], [0022], [0024], [0051], [0052], [0053], [0056], [0057], [0060], [0063], [0064], [0065], [0072], [0074], [0076], [0077], [0078], [0084], [0090], discloses immersing (submersing) an exposed resist coated substrate (the exposed novolak resin is exposed to light to form a cured resin, exposed resist-coated substrate is subjected to stripping) in a stripping bath (storage device containing liquid) thereby the substrate is submersed in the stripping liquid such as glycol ether type solvent, said resist-coated substrate undergoing a stripping process in the stripping treatment bath, wherein the

bath includes a stripping liquid that strips the resist from the substrate resulting in an increase in the concentration of the resist (solute) in the resist stripping liquid (solvent); the increase in dissolved resists increases the concentration of the degraded components (solute) in the resist stripping liquid (solvent) causing the ratio of the amount of degraded components to the amount of the stripping liquid to increase, also causing a change in the electrical conductivity (electrical characteristics) of the water-based stripping liquid; measuring the electrical conductivity, using an electrical conductivity meter, of the resist stripping liquid along with the degraded components in the treatment adjusting bath to ascertain the degraded component concentration in the liquid (claim 17).

The difference between the claims and Nakagawa is that Nakagawa does not disclose using laser to form the cured resin portion on the object (substrate coated with the resist). Nakagawa does not disclose that the glycol ether type solvent is a tripropylene glycol methyl ether. Nakagawa does not disclose that the submersion of the resist coated substrate (resin coated object) is in the liquid in the storage device (liquid in the bath).

Paal, in col 4, lines 7-15, in col 5, lines 3-40, discloses that the substrate with the photoresist is immersed in a solution in the tank (container).

The difference between the claims and Nakagawa in view of Paal is that Nakagawa in view of Paal does not disclose using laser to form the cured resin portion on the object (substrate coated with the resist). Nakagawa in view of Paal does not disclose that the glycol ether type solvent is a tripropylene glycol methyl ether.

Oberlander, in col 5, lines 35-44, discloses that laser radiation is used for performing exposure on the photoresist coated substrate (curing the photoresist). Oberlander, in col 3, lines 30-39, discloses that the resist stripping solution is a glycol ether type solvent such as tripropyleneglycolmethylether.

The difference between the claims and Nakagawa in view of Paal and Oberlander is that Nakagawa in view of Paal and Oberlander does not disclose that the changes in the electrical conductivity are used to drive plurality of display elements in the claimed manner.

Obeng, in the abstract, and in col 2, lines 1-38, discloses that the changes in the conductivity (i.e., electrical conductivity) are measured, monitored and visually displayed via display elements such as analyzer electronics and a computer indicating the different values (ratio of dissolved photoresist to solvent).

Therefore, it would be obvious to a skilled artisan to modify Nakagawa by immersing the substrate in the solution in the container as taught by Paal because Paal, in col 6, lines 46-68, and in col 7, lines 1-3, discloses that the photoresist coated substrates that were subjected to stripping by immersing in the solution for a predetermined time resulted in a substrate surface that was completely clean (from photoresist residues) and unstained, and the quality of the substrate surface from which the photoresist had been removed remained excellent. It would be obvious to a skilled artisan to modify Nakagawa in view of Paal by employing the solvent suggested by Oberlander because Oberlander in col 3, lines 30-40, and in col 6, lines 20-28, discloses that the suggested solvent is a non-corrosive stripper for photoresists and

organic residues and is easily miscible with water and has a boiling point greater than 60°C, and thereby suitable for minimal heating. It would be obvious to a skilled artisan to modify Nakagawa in view of Paal by using laser to cure resin as suggested by Oberlander because Oberlander, in col 5, lines 40-45, discloses that any actinic radiation including laser can be used to perform exposure on the resist layer and Nakagawa, in [0004], discloses that the resist is irradiated (cured) by performing exposure to light. It would be obvious to a skilled artisan to modify Nakagawa in view of Paal and Oberlander by employing display elements in the manner suggested by Obeng because Obeng in col 2, lines 1-7, and lines 40-45, discloses that i) the analyzer electronics analyses the solvent and creates an output that are then provided to the computer for appropriate comparison of predetermined values, and ii) the computer enables the continuous monitor of the solvent used during integrated circuit processing and further enables the production of improved integrated circuits.

(10) Response to Argument

Argument regarding Rejection 1 under 35 U. S. C. § 103

A) Appellant argues that Nakagawa does not disclose or suggest any kind of display system for visually indicating the condition (or characteristic) of the liquid being used in the stripping system.

Nakagawa, in paragraph nos. [0063], and [0064], and in figure 1, discloses that the absorptiometer and electrical conductivity meter measure the absorbance and electrical conductivity respectively of the stripping liquid in the treatment bath, and the

measurements are done continuously. An absorptiometer measures and displays absorbance values, also a conductivity meter measures and inherently displays the conductivity values. Therefore, Nakagawa does suggest a display option for indicating the condition of a stripping liquid. See below,

> pipeline **10**. Furthermore, downstream of the filter **9**, a pipeline **14** splits off from the pipeline **10**; an absorptiometer **15** and an electrical conductivity meter **16** (degraded component concentration measurement means), which are connected to an absorbance controller **30** and an electrical conductivity controller **31** respectively, are provided in the pipeline **14**; connected downstream of the absorptiometer **15** and the electrical conductivity meter **16** is a pipeline **18**, which connects back to the pipeline **10**. Furthermore, the
>
> **[0064]** The absorptiometer **15** and the electrical conductivity meter **16** installed online in this way measure the absorbance and the electrical conductivity respectively of the water-based resist stripping liquid in the resist stripping treatment bath **1**. A sample liquid from the water-based resist stripping liquid is led into the absorptiometer **15** and the electrical conductivity meter **16** from the pipeline **14**, the absorbance and the electrical conductivity are measured continuously, and the liquid on which the measurements

B) Appellant argues that Nakagawa's system will not provide any visual signal or indication that the liquid is approaching a point at which it would need to be changed.

Nakagawa, in paragraph nos. [0064], [0065], [0066], and [0071], discloses that the electrical conductivity and absorbance of the stripping liquid in the system is continuously measured i.e., the condition of the liquid is determined via the values indicated by the meters viz., conductivity meter, and absorptiometer. Nakagawa, in [0065], [0066], and [0071], discloses that the values measured by the meters is conveyed to a controller, wherein the controller, based on the measured value and

preset target value, signals the control valves to replenish the bath if the measured values exceed the target value i.e., a point at which the liquid needs to be changed, and replenishing of the liquid in the stripping liquid bath occurs till the concentration values becomes a target value. As described, Nakagawa, does provide visual signals via the meters, and as a result, the meters (conductivity meters, and absorptiometers), via the controller, automatically controls the replenishing of the liquid (removing some of the liquid, and adding the solvent).

C) Appellant argues that there is no need for a display system in Nakagawa to alert a user as to the changing ratio of various intermixed components making up the liquid, because the maintenance of the liquid in the fluid bath is handled by various controllers and valves that resupply the treatment bath as needed.

Nakagawa, as described in argument A) and B), discloses the use of meters that inherently display measurement values that indicate the condition of the stripping liquid i.e., the electrical conductivity meter indicates the electrical conductivity of the stripping liquid. Claim 1 recites, the following, see below,

1. (Currently Amended) A method comprising:

forming at least a portion of an object by curing resin;

providing a storage device containing a liquid, the liquid comprising solvent and dissolved resin, the liquid having a ratio of the dissolved resin to the solvent;

removing an amount of resin from the object by submersing the object in the liquid in the storage device in a manner such that the amount of resin becomes dissolved in the liquid and thereby increases the ratio of the dissolved resin to the solvent of the liquid, the increase of the ratio altering an electrical characteristic of the liquid; ~~and~~

utilizing changes in the electrical characteristic of the liquid as an indicator of the ratio of the dissolved resin to the solvent of the liquid; and

using said changes in the electrical characteristic of the liquid to drive a visual display that is able to provide a plurality of different indications as to said ratio.

Claim 1, does not recite "a display to alert a user the changing ratio of various intermixed components making up the liquid".

D) Appellant argues that there is no visual monitoring of the condition of the fluid required by an individual with the Nakagawa et al., system.

As, addressed in argument C), above, the claim does not require visual monitoring of the condition of the condition of the fluid by an individual. Nakagawa, as discussed in argument B), above, discloses that the conditions i.e., the conductivity and absorbance of the liquid are visually displayed via the corresponding meters.

E) Appellant argues that Paal does not disclose using a display system to indicate the ratio of the dissolved resin to the solvent.

Paal is not depended upon to disclose a display system that indicates the ratio of the dissolved resin to the solvent. Paal is depended upon to disclose that the photoresist coated substrates (objects) are immersed in the solution (submersing the object in the liquid in the storage device) in a tank for a predetermined time during the stripping process.

F) Appellant argues that Paal does not disclose using a display system and a monitoring device that communicate to indicate the condition of the solvent in the tank.

As discussed in argument E), above, Paal is not depended upon to disclose the display system and/or a monitoring device. Nakagawa is depended upon to disclose a display system as discussed in arguments A through D) above. The claims do not recite the limitation "a display system and a monitoring device that communicate to indicate the condition of the solvent in the tank".

G) Appellant argues that Obeng does not disclose the use of a display system that display a plurality of different ratios of the dissolved resin to the solvent.

Obeng is depended upon to disclose the use of an analyzer electronics that monitors and analyses the conductivity of the solution and creates an output based on the different measured values, and shows the conductivity vs. time graph (see figure 5) of the fluid in the tank, and Obeng discloses that the output of the analyzer electronics can be provided to the computer for appropriate comparison of predetermined values. A comparison cannot be made without a visual display, and Obeng in col 2, line 55, discloses that the fluid is monitored by the analyzer and the computer i.e., the

conductivity values are visually displayed for a monitoring and comparison to occur. Also the output of the analyzer electronics is not just one conductivity value, the conductivity sensor is immersed in the liquid for constant monitoring of the conductivity of the liquid, i.e., different values are observed/displayed via computer and/or analyzer electronics so as to display a graph (see figure 5). Also, Nakagawa also indicates the condition of the liquid (ratio of resin dissolved to the solvent) via i) a conductivity meter, and ii) an absorptiometer.

H) Appellant argues that Obeng does not show or mention a display system.

As discussed in argument G) above, Obeng, in col 2, discloses that a computer and an analyzer electronics is used for monitoring and comparing values i.e., these devices have a display.

I) Appellant argues that Obeng does not disclose that monitoring is accomplished through display.

Obeng, in col 2, lines 54-55, discloses that monitoring of the conductivity is accomplished via the analyzer electronics and the computer i.e., monitoring through a display. Additionally, the claims do not recite "monitoring through a display".

J) Appellant argues that Obeng does not disclose that conductivity values are displayed on a display system for a user to see.

See argument G), and H), above. Additionally, the claims do not recite "conductivity values are displayed on a display system for a user to see".

There is No Need for a Conductivity Display System in Nakagawa et al.

K) Appellant argues that there is no need for a conductivity display system in Nakagawa et al.

This argument has been addressed in argument C) above.

L) Appellant argues that there is no motivation to combine a display system with Nakagawa's system, and that the visual display would provide no benefit nor serve a purpose.

Nakagawa illustrates the resist-stripping liquid management apparatus in figure 1, and Nakagawa, in paragraph nos. [0064], [0065], [0066], and [0071], discloses that the conductivity and absorbance values are measured continuously via the electrical conductivity meter, and absorptiometer respectively. A conductivity meter and an absorptiometer inherently display a value of the conductivity and absorbance respectively; and the meters do provide a benefit, and serves a purpose by sending the output of the measured values to a controller that compares the measured values with the target value, and for a situation wherein the measured valued exceeds the target value the controller signals the control valves to replenish the liquid in the stripping treatment bath.

Argument Regarding Rejection 3

M) Appellant argues that Kung does not disclose using the LEDs in connection with a liquid monitoring operation where the LEDs provide an indication as to the changing chemical makeup of a fluid in a fluid reservoir.

Kung is not depended upon to disclose a liquid monitoring operation. Also, claims 8-9, and 14-15, do not recite "the LEDs in connection with a liquid monitoring operation where the LEDs that provide an indication as to the changing chemical makeup of a fluid in a fluid reservoir". Nakagawa is depended upon to disclose the continuous measuring of the stripping liquid via a conductivity meter and a absorptiometer. Obeng is depended upon to disclose plural indications of the dissolved resist to solvent via an analyzer and a computer. Also see arguments B) and G) above. Kung is depended to disclose the type of visual display that can be used in electrical conductivity measurements wherein the conductivity measurements are displayed via three LED's.

N) Appellant argues that Kung is a non-analogous art to the present application.

Kung is not depended upon to disclose the method of measuring the conductivity of a stripping liquid in a solvent saturation system. Nakagawa teaches a method of measuring the electrical conductivity of the stripping liquid continuously. Kung is depended upon to disclose the use of LED's as visual displays in order to indicate different ranges of electrical conductivity levels.

O) Appellant argues that neither Nakagawa nor Paal will be motivated to incorporate Kung's LEDs into a system to provide a visual indication of the ratio of two intermixed liquids.

Nakagawa and Paal would be motivated to incorporate Kung's LEDs into a system so as to provide plural ranges of electrical conductivities because Kung in paragraph nos. [0009], and [0011], discloses that an LED can be used in place of a meter, and in paragraph no. [0034], discloses that using three LED's enable the indication of the different conductivity levels such as good, low or bad using the LED's corresponding colors such as greed amber, and red.

Argument Regarding Rejection 4.

P) Appellant argues that Oberlander does not disclose a display system in connection with a liquid stripping system as disclosed in Nakagawa.

Oberlander is not depended upon to disclose a display system in connection with a liquid stripping system. Oberlander is depended upon to disclose the use of a laser to cure the resin (photoresist) coated on the substrate (object), and to disclose the type of solvent used in the stripping liquid. Nakagawa, as discussed in arguments A), B), and C) above, discloses the use of a display system (conductivity meter) that is connected with the stripping liquid bath.

Q) Appellant argues that Obeng does not mention a display system.

Nakagawa, as discussed in arguments A) through C), discloses that the conductivity meter and the absorptiometer continuously measure the conductivity and absorbance of the stripping liquid, and the meters inherently displays the measured values. Obeng is depended upon to disclose plural indications of the dissolved resist to solvent via an analyzer and a computer. Obeng is depended upon to disclose the use of an analyzer electronics that monitors and analyses the conductivity of the solution

and creates an output based on the different measured values, and shows the conductivity vs. time graph (see figure 5) of the fluid in the tank, and Obeng discloses that the output of the analyzer electronics can be provided to the computer for appropriate comparison of predetermined values. A comparison cannot be made without a visual display, and Obeng in col 2, line 55, discloses that the fluid is monitored by the analyzer and the computer i.e., the conductivity values are visually displayed for a monitoring and comparison (comparing measured data with predetermined data) to occur.

R) Appellant argues that none of the references disclose a plurality of display elements.

Obeng discloses that the output of the analyzer electronics can be provided to the computer for appropriate comparison of predetermined values. A comparison cannot be made without a visual display, and Obeng in col 2, line 55, discloses that the fluid is monitored by the analyzer and the computer i.e., the conductivity values are visually displayed for a monitoring and comparison, wherein comparison is made with data from the output of the analyzer electronics (i.e., measured data) and the predetermined data, to occur. Also the output of the analyzer electronics is not just one conductivity value, the conductivity sensor (see reference 19, in figure 1) is immersed in the liquid for constant monitoring of the conductivity of the liquid, i.e., different values are observed/displayed via computer and/or analyzer electronics so as to display a graph (see figure 5). Also, Nakagawa also indicates the condition of the liquid (ratio of

resin dissolved to the solvent) via i) a conductivity meter, and ii) an absorptiometer i.e., two display elements.

The Examiner Has Not Made A Prima Facie Case of Obviousness.

S) Appellant argues that none of the references teach driving a display device.

Nakagawa teaches the use of electrical conductivity meter and an absorptiometer that monitor and measure the stripping liquid continuously. The meters visually display the values measured. Obeng discloses the use of an analyzer electronics that monitors and analyses the conductivity of the solution via a conductivity probe, and creates an output based on the different measured values, and shows the conductivity vs. time graph (see figure 5) of the fluid in the tank i.e., Obeng discloses driving a display device, and Obeng discloses that the output of the analyzer electronics can be provided to the computer for appropriate comparison of predetermined values.

T) Appellant argues that there is no motivation to combine Nakagawa, Paal, Obeng and Kung references.

The motivation to combine Nakagawa, Paal, and Obeng is discussed in paragraph no. 5 of "Grounds of Rejection". Also, see argument O) above.

U) Appellant argues that Kung is related to a battery tester device and that Kung has nothing to do with monitoring the chemical makeup of a liquid bath.

Kung is not depended upon to disclose monitoring the chemical makeup of a liquid bath. Also, the claims do not recite "monitoring the chemical makeup of a liquid bath". Kung is depended upon to disclose the use of LED's as visual displays in order to indicate different ranges of electrical conductivity levels.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Daborah Chacko-Davis/

Examiner, Art Unit 1795

Conferees:

/Jennifer Michener/

Jennifer Kolb-Michener

/Mark F. Huff/

Supervisory Patent Examiner, Art Unit 1795